

Myth: Thimerosal in Vaccines Causes Autism

What is Thimerosal?

Thimerosal is a mercury-containing preservative that was used in vaccines to prevent contamination. However, most vaccines are now manufactured in single-dose vials and syringes which do not need preservatives.

How did this myth get started?

The concern was that thimerosal could cause mercury poisoning, which might lead to autism. Mercury poisoning has occurred in some populations from excessive environmental exposures. The signs of mercury poisoning may include excessive sweating, tremors, kidney problems, and it may cause the affected person to talk like they have had a stroke. However, people who have had documented mercury poisoning do NOT have the signs and symptoms of autism.

If mercury poisoning can cause neurological problems, then isn't it possible for thimerosal to cause autism?

No. The mercury that is in thimerosal is a different kind of mercury than the kind that causes mercury poisoning. The type of mercury in thimerosal is removed from the body much more quickly than the other kind of mercury found in the environment. In addition, the mercury that is in thimerosal, is too large of a molecule to enter the brain.

Mercury was taken out of most vaccines in 2001, but the rates of autism are still going up in the US. If thimerosal were the cause of autism, then the rates of autism would be going down by now. Thimerosal was removed from vaccines in Denmark in 1992, and soon after that in Canada and in Europe, but their rates of autism are also rising.

Mercury is part of the earth's core, and is an environmental contaminant in the water supply. One can of tuna fish has five-times more mercury than a dose of flu vaccine. Keep in mind, too, that the type of mercury in thimerosal cannot enter the brain even if it does enter the body. A baby that is exclusively breast-fed for 6 months gets 25 times more mercury than in one dose of flu vaccine, and twice as much as was ever contained in all the doses of pediatric vaccine that they would receive during childhood. This does not mean that parents shouldn't breast-feed or that children should not eat tuna fish; it is only to illustrate how little mercury was ever contained in vaccines.

At this time, none of the vaccines that children are routinely exposed to contain thimerosal, so there is little left to worry about. Some forms of flu vaccine do contain thimerosal, but the amount is very little compared to a child's overall exposure to mercury.

Have there been studies to determine if thimerosal causes autism?

Yes, many. Some studies have looked at groups of children who received different amounts of thimerosal in their childhood vaccines, and all groups had similar rates of autism. Other studies looked at groups of autistic children and non-autistic children, and found that there was no difference in the amount of thimerosal-containing vaccine that each group received.

So why to some parents still feel that thimerosal causes autism?

Signs of autism are often present in children long before their families notice them. An old family video or a recount from a friend may sometimes indicate that the signs of autism were present long before the parents noticed them. While developmental specialists can detect the signs of autism in very young children, parents often do not notice them until 18 to 24 months of age. By this age, children have received most of their childhood vaccines. The fact that the child may have been vaccinated just prior to diagnosis with autism is a coincidence.

What does cause autism?

There are many likely connections, but autism is very complex so we don't know for sure what all the possible links are. What is known is that genetics plays a major role. Studies in twins reveal this important connection. Identical twins share 100% of their genes in common, whereas fraternal twins and other siblings, share only 50% of their genes in common. If autism had a genetic component, it would be expected that identical twins would be more likely to be autistic than would fraternal twins. In fact, when one identical twin is autistic, there is a greater than 3 out of 4 chance that the other twin is affected, too. But in fraternal twins, when one twin is affected, there is only a 1 out of 7 chance at most that the other will be affected.

Why has the number of children with autism increased over the past few decades?

The diagnostic criteria for autism has changed, so providers are making more diagnoses. In the past, autistic children were often diagnosed as having a learning disability or mental retardation. Now that providers understand the disease better and have improved diagnostic criteria, more of those children are being diagnosed as autistic, which fewer are being diagnosed as having a learning disability or mental retardation.

If I am still concerned, should I wait to vaccinate my baby?

No. Routine infant vaccines no longer contain thimerosal, so there should not be any concerns about this. In addition, delaying or withholding vaccines will not prevent autism. It will only increase the time that your child is at risk for those vaccine-preventable illnesses. A choice not to vaccinate is a risky choice.

Where can I get more information?

<http://www.cdc.gov/vaccinesafety/index.html>

<http://www.chop.edu/service/vaccine-education-center>

<http://www.vaccineinformation.org/>

<http://www.healthychildren.org/english/health-issues/vaccine-preventable-diseases/Pages/default.aspx>

<http://www.immunizeca.org/resources/vaccine-safety>